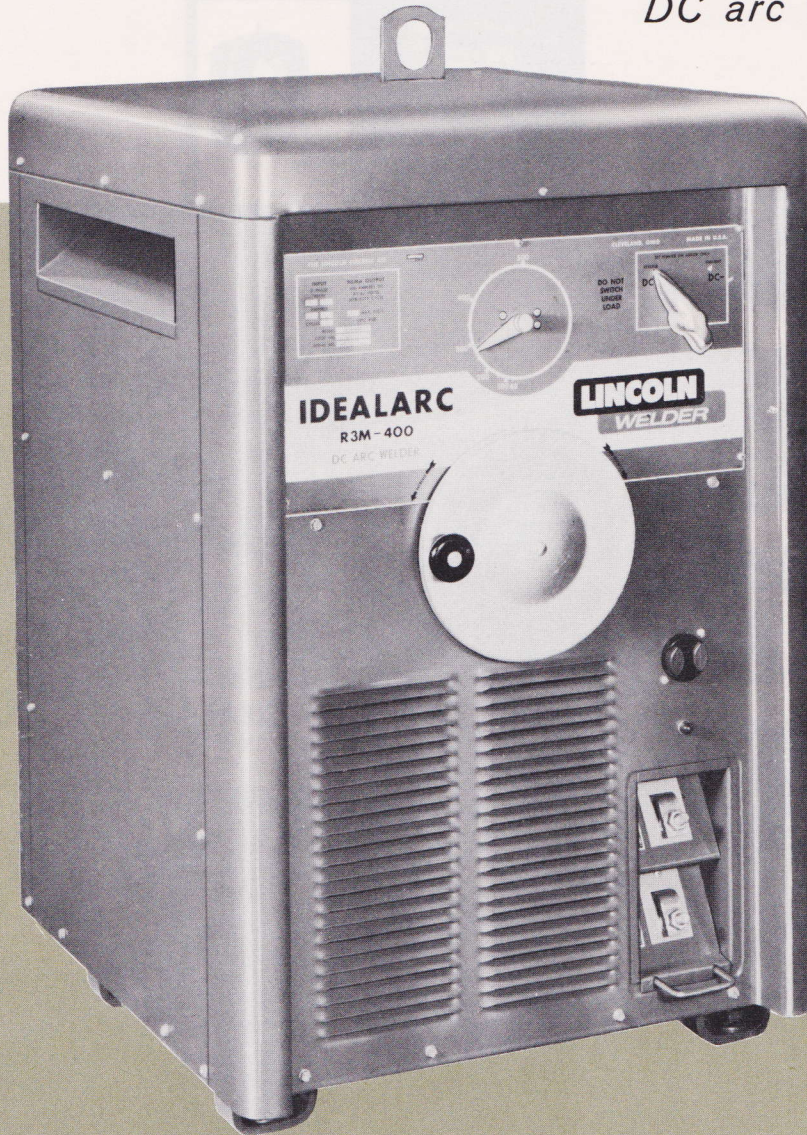


LINCOLN
WELDERS

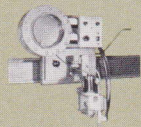
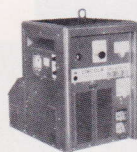
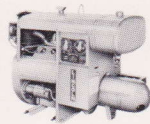
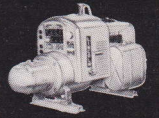
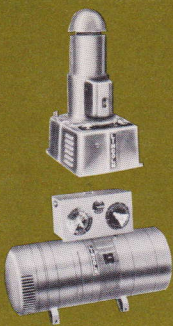
three phase rectifier **IDEALARC R3M®**

DC arc welders



Announcing a new family of **LINCOLN WELDERS**

- . . . full range of sizes, 300 amp to 650 amp
- . . . generous capacity in each size
- . . . ideal arc characteristics
- . . . rugged, maintenance-free, construction
- . . . surprisingly low price



A great new addition to the World's Most Popular Line of Welders

Lincoln's all new IDEALARC R3M

three phase rectifier DC arc welder

With such a large group of Lincoln welders already available to meet the needs of welding users, you might wonder why the new Idealarc R3M is necessary. Here is the reason—on some applications the following are either necessary or highly desirable:

1. DC welding current for small sized electrodes or stainless steel, alloy, non-ferrous or other special electrodes.
2. A current range broad enough to handle both semi-automatic equipment and small manual electrode.
3. A balanced, three phase input current.
4. Quiet operation.
5. Low idle currents.
6. High power factor and efficiency.

Only in a three phase rectifier, such as the new Idealarc R3M, can all these features be incorporated into one machine.

In addition to these features, the rugged construction of this new Lincoln welder promises to set new high standards of trouble-free operation and minimum maintenance. The highly efficient silicon rectifiers do not age or deteriorate and are exceptionally well protected against overloads with special electrical circuitry.

APPLICATIONS

For Manual Welding—The Idealarc R3M will handle any manual electrode. Its output characteristics produce smooth, steady, spatter-free welding at high currents and strong current surges that prevent sticking at low currents. In the production plant, maintenance shop, or the construction site, your operators will enjoy using the Idealarc R3M.

For Semi-Automatic Welding—The larger sized Idealarc R3M's, equipped with the optional "Power Pack", can be used as a power source for Lincoln's submerged arc Squire Welders or other semi-automatic equipment. Equipped with two sets of leads, one Idealarc R3M can be used alternately for both manual and semi-automatic welding—double duty for added versatility and reduced capital investment!

PERFORMANCE FEATURES

Output Characteristics—Idealarc R3M has unique and important built-in characteristics that make welding easier.

First, to prevent sticking with small electrodes, the machine produces a surge of current as arc length is shortened. This surge, seen as the "toe" of the low current settings curve, eliminates the need for separate switches and circuits to prevent sticking.

Second, for smoothest operation of large electrodes, the output curve at high current settings has a gradual slope and is relatively unaffected by arc length variations. There is minimum spatter and "wild arc" action.

Third, for maximum arc stability, R3M's choke coil is designed so that any electrode can be run at any appropriate current, using any technique, with complete freedom from pop-out.

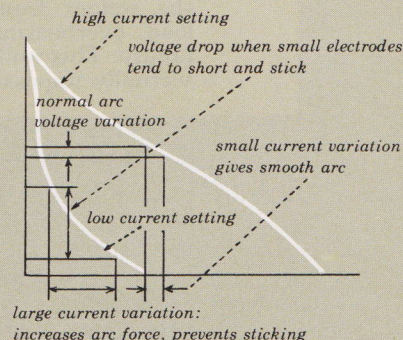
Input Power—The Idealarc R3M draws a balanced three phase current from the lines. Particularly important where machines are installed on existing lines, this characteristic usually permits direct replacement of obsolete welders with new Idealarc R3M's without installation of additional wiring, switches or fuse boxes.

Starting and idle current on Idealarc R3M welders is practically nil, amounting to less than 15% of the rated input current. On field applications, the number of machines which can be powered by one generator set depends only on usable rated current, not starting current.

Power factor is high and idle amps low on the Idealarc R3M. Efficiency is excellent. Overall, for machines operating at rated load, efficiency is about 75%. Note that the silicon rectifiers contribute considerably to this. They are about 4 times as efficient as selenium rectifiers.

You'll find the Idealarc R3M welder truly ideal from the standpoint of every input power consideration.

Low Cost—After you've checked the performance and construction features of the Idealarc R3M and convinced yourself that it is tops in its class, then look at its price. You'll be pleasantly surprised.



CONSTRUCTION DETAILS

Current Control — An easily turned crank on the front of the machine provides continuous current control over the entire range of the machine by a movable core in the reactor windings. The mechanical system used to move the core is rugged, noise-free, smooth and free of creeping problems.

Polarity Switch — Durable, silver-plated contacts with sturdy mechanical construction assure thousands of trouble-free polarity changes.

Case — The recessed front prevents damage to external controls. Output studs are recessed even further and separated to eliminate accidental shorts. Strain relief loops prevent needless wear on output studs and loose connections that dissipate output and cause operator annoyances.

Lift Bail — Whether you move your machine once or hundreds of times, the convenience of the sturdy lift bail will be apparent. Welded directly to the sturdy frame of the machine, the lift bail is attached permanently regardless of how severely it is used.

Signal Light — Red light indicates machine is on; prevents accidental idle operation during non-working hours.

Line Contactor Starter and Overload Protection — Operated by a push button on the front panel, a heavy duty magnetic contactor energizes the machine. Protective circuits automatically disconnect the welder from the line in the event of overload, overheating from any cause, or input power failure. This well-proved protective system makes it virtually impossible to burn out the Idealarc R3M.

Weatherproofing — Louver design prevents entry of rain, or other falling liquids, into the machine. Also, electrical parts receive a double dip in a special insulating material after they are assembled and interconnected to repel the attack of salt air or other corrosive atmospheres.

Silicon Rectifiers — After years of testing, Lincoln engineers are convinced that the silicon diodes and circuitry employed in the Idealarc R3M provide unequalled rectifier performance and life. To the well-established efficiency and freedom from aging of silicon diodes, Lincoln has added exceptionally large safety margins and unique protective circuits to overcome the problem of overvoltage failures that plagued silicon rectifiers in the past. The results are outstanding.

Windings — Most of the windings in the Idealarc R3M are aluminum, which permit a compact, lightweight design. As in other Lincoln welders the aluminum-copper connections are flash-butt welded and sealed forever in a protective coating. There are no mechanical aluminum-copper joints.

Fan and Cooling System — A large fan moves generous quantities of cooling air through the machine. Clean air flows in at the top of the welder, passes first over the rectifier heat sinks, then down over the windings, and exhausts through louvers in the front panel. A large safety factor in temperature rise, designed in the machine, permits the use of the Idealarc R3M on even unusually severe applications.

SPECIFICATIONS

Model Type		60 cycle 50 cycle	Idealarc R3M			
			K-1149 K-1153	K-1150 K-1154	K-1151 K-1155	K-1152
NEMA Rating:	Current		300 amps	400 amps	500 amps	650 amps
	Arc Voltage		40 volts	40 volts	40 volts	40 volts
	Duty Cycle		60%	60%	60%	60%
Current Range			30-375	40-500	50-625	65-750
Input Power:	Voltages *			220/440		220/440
	Cycles			60 and 50		60
	Phase			Three Phase		Three Phase
	Rated Current (220 volts)		58 amps	75 amps	94 amps	120
	Idle Current		9 amps	11 amps	13 amps	13
	Power Factor @ Rated Load		74%	76%	75%	74%
Weights (Approx.):	Net		586 lb.	675 lb.	800 lb.	910 lb.
	Domestic Shipping		650 lb.	739 lb.	864 lb.	974 lb.
	Export Shipping		731 lb.	820 lb.	945 lb.	1055 lb.
Dimensions (all types)			Height	Width	Depth	
	Machine, overall		39 1/8"	26 1/8"	28 1/2"	
	Export Crate		55"	36"	36"	

*220/380, 220/550 and single voltages available on special order

OPTIONAL FEATURES

(at slight additional cost)

Undercarriage — provides portability. A sturdy three-wheeled undercarriage with either steel (K-726) or solid rubber tires (K-726R) is available for field installation.

Remote Current Control — Changes machine current setting from the operator's station with a simple toggle switch. The switch operates a motor inside the welder case which rotates control crank to adjust current up or down. Available factory-installed only.

ML-2 Power Pack — provides 115 volt DC control power and other circuits necessary for Lincoln ML-2 Squirt Welder. Available as a kit for field installation.

115 Volt Starter Circuit — for plants with regulations requiring 115 volts on starter push button circuits. Available factory-installed only.

Accessory Kit — includes headshield and lenses, electrode holder, ground clamp, and cables. Priced below total price of individual components.

Remote Polarity Control — Change from DC (+) to DC (—) or vice versa, with a switch attached to the electrode holder or mounted at the operator's station.

THE LINCOLN ELECTRIC COMPANY
Cleveland 17, Ohio

The World's Largest Manufacturer
of Arc Welding Equipment
and Electrodes.

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